THE NEW YORK, NEW HAVEN AND HARTFORD RAILROAD COMPANY
NEW HAVEN DIVISION NEW HAVEN TERMINAL

Description of the Cedar Hill Yards and Explanation of their Operation

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The Cedar Hill Yards are part of the New Haven Terminal consisting of 25 yards and switching districts and were so located to provide a classification facility to serve the many converging routes which a glance at the New Haven Railroad map will show. There are 14 yards in the Cedar Hill Territory, with approximately 15,000 cars capacity, covering 850 acres, extending 7.1 miles from New Haven to most northerly point with 154 miles of track and approximately 1.5 miles wide across the Creosoting Plant.

There are four main tracks east and west of New Haven Station with ten tracks serving the station, excluding the stub end tracks at both ends. The inner two tracks in the east cut are double signalled for traffic in either direction providing flexibility and permitting three movements in either direction at one time.

The inbound freight track for eastbound trains from New York and Maybrook and West Hump trains from the New Haven Yards is depressed in compliance with final plans for a grade separation at Air Line Junction 2.20 miles from New Haven. The turnout in this track is for movement to the West Hump. A circle track behind enginehouse provides facility for electric locomotives after leaving trains in the Eastbound Receiving Yard going to the Westbound Departure Yard for return train or to the tie-up track there without interference with other yard movements.

The Quinnipiac River marks the northern boundry of the New Haven Terminal prior to the construction of the Cedar Hill Yards.

Passing under the bridge which carries the Shore Line inbound and outbound tracks are the Air Line Main Track to Middletown and Willimantic, the lead to the eastbound receiving yard and the thoroughfare track to the Shore Line Departure Yard.

The east unit consists of a Receiving Yard of 9 tracks, each of 110 car capacity, with intermediate crossovers, 7 tracks electrified. Final plans provided for 14 tracks, all electrified, but the installation of car retarders enables the quicker classification of cars and will make this additional capital expenditure unnecessary.

Before reaching the hump, a track is provided for setting out cars containing explosives, which the Law and the Company regulations prohibit cutting off in motion.

This is a "hump" or gravity yard. Cars are pushed up the incline, uncoupled and a sufficient grade is provided to carry the lightest car we receive to the lower end of the classification yard. The classification tracks are in groups of five with six retarders protecting every route. Three control towers from which are operated the switches and retarders. The grades in the yard are so maintained that after passing through the last retarder, the cars maintain a safe speed to the coupling point in the classification yard.

The yard was previously operated with car riders and speeder cars to return riders to the hump. Instead of that the car control is now provided by the car retarder operators, much more efficiently and safely than is possible with car riders and the two speeder car tracks are now used as classification yard tracks.

The classification yard has 51 tracks all double ended. Five of these tracks are used for repairs to cars. Four lighting towers 70 feet high, each carrying eight 1,000 watt flood lights provide excellent night illumination.

There is a tunnel under the classification yard for pedestrian travel to the west side of the yard, L.C.L., etc. There are three departure yards; the Hartford, directly north for Hartford, New Britain and Springfield; the Shore Line on the lower level between the East Hump and the L.C.L. Transfer for trains to New London, Providence, Boston, Fall River, Newport, Brockton, Worcester, Portland, Me., etc., and the relief departure yard on the east side of the receiving yard which was to be a part of the receiving yard.

A modern car shop is located on the East side of the repair tracks in the classification yard.

METHODS OF OPERATION

We have information on all trains enroute to the Cedar Hill Yards and assign switching power in accordance with the amount of business to be handled on each eight hour shift. The hump yardmaster notifies the switchtender at the entrance to the receiving yard as to the tracks to be used. After train arrives in the receiving yard, the locomotive is detached, waybills delivered and engine returned to west end of the yard for the caboose and thence to the Westbound Departure Yard for return train or to tie up. Trains are promptly inspected by car inspectors. Cars with defects requiring movement to the repair track are so carded and reported to the yardmaster before humping. Revenue waybills accompanying the cars from the originating points on this or any railroad in the United States or Canada are delivered to the yardmaster, sent by pneumatic tube to the central office, where combined arrival record and humping list is made upon master teletype machine for car record office, yardmaster and yard conductor who uncouples the cars, simultaneously recording identical information in each of the three car retarder towers upon receiving teletype machines.

After train is released by inspectors, the humping engines, of three cylinder type, with a total weight on drivers of 247,000 pounds, exclusive of tender, and 60,300 pound tractive effort, push it to the hump. Conductor governs the movement of the train by fixed signals at the hump which are repeated by light signals in the receiving yard; showing - Red - Stop; Yellow - hump slow; Green - proceed to the hump, and uncouples cars in accordance with switch list. An air whistle is provided for signalling to hump engines.

As cars leave the hump they are switched to tracks as shown on switch list by car retarder operators who operate all switches and retarders from the towers. Switches and retarders are electro-pneumatic. Track circuits prevent operation of switches between trucks of a car and indicators on machines show location of cars and position of switches, whether set for the ladder or diverging tracks, or circuit fouled. Rerailing devices at ends of car retarders automatically rerail any car should a wheel be lifted in retarder. Position of retarder are - release; #1 - 20 pounds; #2 - 35 pounds; #3 - line pressure 85 to 90 pounds; #4 maximum of approximately 1400 pounds per square inch.

A loud speaker circuit connects the hump yardmaster, yard conductor, the three towermen, the two skatemen and the yardmaster at the opposite end of the classification yard. Loud speakers in the lower end of the classification yard can be distinctly heard from any point in the yard.

Upon each track in the lower end of the classification yard, track skates are placed to stop cars on clear tracks and yard brakemen; known as skatemen - are provided to handle these skates and set hand brakes on a sufficient number of cars at the lower end of the classification yard to hold the cars into clear.

After train is switched, yardmaster makes any changes from original track numbers shown, signs and delivers list to train clerk for bill distribution to proper racks. Bill rack shows bills in the same order as cars on respective tracks. Train clerks will notify yardmaster at classification yard of the number of cars to be taken from each track in making up the trains. Bills are then forwarded by pneumatic tube to the departure yard for necessary train records covering outbound movement. Each track in the classification yard is used for a particular classification and changes are very infrequent. Classifications must be arranged for prompt handling at opposite end of yard without interference with other switching moves and you will notice on passing through this location that a large number of crossovers and leads are provided to keep several switchers busy and out of each other's way.

When we had a very heavy run of business it has been possible to show some very good humping operation, of which the following are typical under rider operation.

8 hour shift West Hump - March 30, 1926 - 1120 cars, 802 cuts, 16 riders, 2 engines.

8 hour shift East Hump - Feb. 2, 1926 - 1029 cars, 765 cuts, 15 riders, 3 engines.
24 hour total West Hump - May 22, 1926 - 2511 cars (with car riders).
24 hour total both Humps - May 22, 1926 - 4092 cars (with car riders).

Regardless of this efficient operation with car riders it was decided to install retarders in the latter part of 1929 to effect economies and provide greater safety to operation.

Under car retarder operation:

8 hour total West Hump - Nov. 25, 1929 - 1044 cars (no sore cars)
8 hour total East Hump - Oct. 6, 1932 - 1109 cars (no sore cars)
24 hour total West Hump - Oct. 23, 1929 - 2774 cars (no sore cars)

The eastbound Hump should efficiently handle 3000 cars and the Westbound Hump 3600 cars per 24 hour period.

Cars humped in 1935 - 960,167; 1936 - 1,119,416; 1937 - 1,085,041. During October and November, 1929 over 7500 cars moved through New Haven Terminal on a number of days. In October, 1925 - 123,700 cars were humped. We have ample plant capacity and equipment for a substantial increase in traffic.

MATERIAL YARD AND RECLAMATION PLANT

A lead from the Eastbound Classification Yard permits quick access to the Reclamation Plant and Material Yard. There are 11 tracks for efficient handling of large timber and such track material as anti-rail creepers, joints, tie plates, bumping posts, switch stands, points, frogs, etc. Rail is unloaded as received from steel mills at point where to be used and ties from the Creosoting plant. Scrap material is handled here for reclamation for the system.

A wye track on north side of the material yard with water column is used by engines arriving on trains from the Hartford Division, turning and then going to the northward departure yard for return trains with not more than an hour necessary from arrival of inbound train to departure of outbound train.

The track below the bridge is proposed Hartford northbound main track; connecting at North Haven Junction with present main track which passes south end of Westbound Departure Yard and now conflicts with westbound freight routes. This proposed route will avoid this.

There is a coal storage of approximately 100,000 tons capacity with trestle of fifty cars capacity and four supporting tracks, two on each side for operation of hoists and placing of cars for loading.

L. C. L. TRANSFER

Four platforms 1200 feet long, three 30 feet wide and one 20 feet wide. Three sets of bridges permit quick movement between platforms without working through cars. At present we have 16 tracks of 448 cars capacity spotted, 196 of which are empty at 7.00 a.m. We have had noon switches to handle business varying from three to five tracks of 28 cars each and make necessary the handling in normal times of 325 to 400 loaded cars per working day. Empty box cars are placed on tracks in center of house with loads on outside although many loaded cars are unloaded and reloaded.

A crane spans four tracks and quickly handles shipments in open top cars such as steel, granite, boilers, tanks, etc., with ramp connection to the L.C.L. Transfer for shipments that can be moved into cars in the set up. There are two tracks for carload transfer nearby. We have 13 yard and storage tracks to facilitate car handling.

Bills are sent from yard offices promptly after arrival by pneumatic tube and pass through routine of inspection, routing, typing to lists for checkers, tonnage record, exceptions noted on waybills, racking, pouching and delivery to yard for outbound movement. Freight is checked from list out of cars and into cars and insures accuracy of loading. Operation is principally tractor and trailers with a small amount of hand trucking for short hauls. These details will be explained to you on your arrival.

Cars are made for 175 destinations, some of which require more than one car, it being the rule to make a direct car to every point possible to avoid rehandling between Cedar Hill and the destination. Practically every car loaded at the L.C. L. Transfer during the day is switched and made up in scheduled trains which leave before midnight or early the next day. This ideally located L.C.L. Transfer eliminated transfer work at a number of other terminals with a substantial saving in time of shipments on our rails and expense of operation.

In one day we have handled 411 cars, approximately 80,000 packages and covered by 14,000 waybills. In one month of 30 working days 10,000 cars; in one week of 7 working days - 2,300 cars; in 1935 - 65,971 cars; in 1936 - 70,012 cars and in 1937 - 71,802 cars. At present the force is 125 men, including everybody.

CREOSOTING PLANT

The plant of the American Creosoting Company at Montowese was built in the winter of 1921-1922 to treat with preservative ties, timber and other forest products for the New Haven Road. The plant was built because of the approaching extinction by a blight of the chestnut tree the principal source of the tie supply and the consequent necessity of substituting non-durable woods, principally mixed oaks. Whereas, chestnut untreated would last from eight to ten years in the ground, this latter species rotted in from three to four years.

Tie replacements once amounted to two million ties per year on an eight to ten year cycle; assuming a life of twenty years for treated material, it is calculated that when all ties on our tracks are treated, the yearly requirements will be cut to 700,000 or 750,000 ties. This will be the normal output of the plant.

The source of supply of these ties is the woodlots and forest lands of small owners contiguous to the lines of the road; Connecticut leading in production, followed by Massachusetts, Rhode Island and New York in the order named. Before blight doomed the Chestnut, it composed one-half the Southern New England forests and the Creosoting Plant is making available for use the remaining woods and keeping alive an industry otherwise in a precarious way, for timber produced in this region is of a type mostly suitable for construction purposes.

This timber cut in sizes suitable for railroad purposes is brought into the yard at Montowese, equipped to hold one million ties, five million feet of switch ties, as well as timber for bridge construction and piling. When seasoned from six months to one year, according to species they are fashioned into permanent form in the adzing and dapping mills before being treated.

This operation is performed prior to impregnation in order that the protecting zone of treated wood may not be destroyed by subsequent re-shaping of the stick. Ties are adzed to give a permanent even bearing for a large tie plate and bored with holes slightly smaller than the spike thus preventing tearing of fibre of wood and assuring the thorough permeation of the wood where most severe wear comes under the rail bearing.

After ties are thus machined, they are placed on trams and made up into trains the length of the cylinder - 150 feet - containing an average of 1,000 ties to a charge. Trains are made up with a motor of mine type and brought to the cylinder to be treated.

Treatment is by the Lowry process, a so-called empty cell process which treats the wood with a minimum amount of oil by injecting a large initial amount and withdrawing as much as possible by a quick, high vacuum. The amount left in the tie is optional. At this point the final retention is about eight pounds of creosote per cubic foot or 2-1/2 gallons to the average tie.

The oil is injected into ties under a pressure up to 175 pounds per inch - the oil being kept at a temperature of 180 degrees. The period of pressure varies with the species and averages two hours, after which the creosote is drained off and a vacuum drawn for one hour. This dries the tie, frees the excess oil and the ties are then withdrawn, loaded into lowside gondolas with a crane and are ready for distribution along the right of way.

During 1937, 442,560 ties, 1,400,296 feet of lumber and 12,061 cubic feet of piling were treated.

Here, therefore, we may see a unit of a large enterprise devoted to conservation. Here the railroad conforming to an enlightened national trend to eliminate waste, has caused to be built this plant in order to help utilize the dwindling forest resources of the region to the utmost by making one piece of timber do what two or three would otherwise be required to do.

WESTBOUND HUMP UNIT

The Westbound Unit consists of a Hartford Receiving Yard with five tracks and a Shore Line Receiving Yard with six tracks, each holding 100 cars. The classification yard has forty-six tracks, holding 1300 cars, including seven repair tracks. The repair tracks have a modern mill building which we will pass. The westbound departure yard has twenty-five tracks, all electrified, holding 1260 cars. Operation here is similar to the eastbound unit.

A stock pen is conveniently located between the two humps for carloads of live stock that must be fed and rested in accordance with the law.

Inspection Plant for electric freight locomotives maintained in this yard with convenient connections between the eastbound receiving yard and the westbound departure yard for movement of electric freight locomotives. The electric passenger locomotive terminal is located west of New Haven Station.

CEDAR HILL ENGINE TERMINAL

Modern power plant of 1200 H.P. using oil for fuel. New feed water system with de-aerating machine recently installed.

Two inspection pits on incoming tracks for necessary locomotive inspection and, running repairs. Engines then pass over ash pits for necessary attention to fires, to engine washing location, to engine house for turning and any repairs not made on inspection pit and are then put on "ready" track for crew of outbound train.

Work reports are handled from inspection pits for Foreman's office by pneumatic tubes and directly maintained at permanent point showing location of all engines on the plant.

Coal pocket - 2400 tons capacity with gravity sand facilities spreading five tracks. Approximately 800 tons of coal are disbursed per day providing fuel for 100 to 110 engines handled each twenty-four hours.

Rest rooms and toilet facilities are provided for all employes required to operate this terminal and for engine crews.

W. S. CARR, Assistant Superintendent.

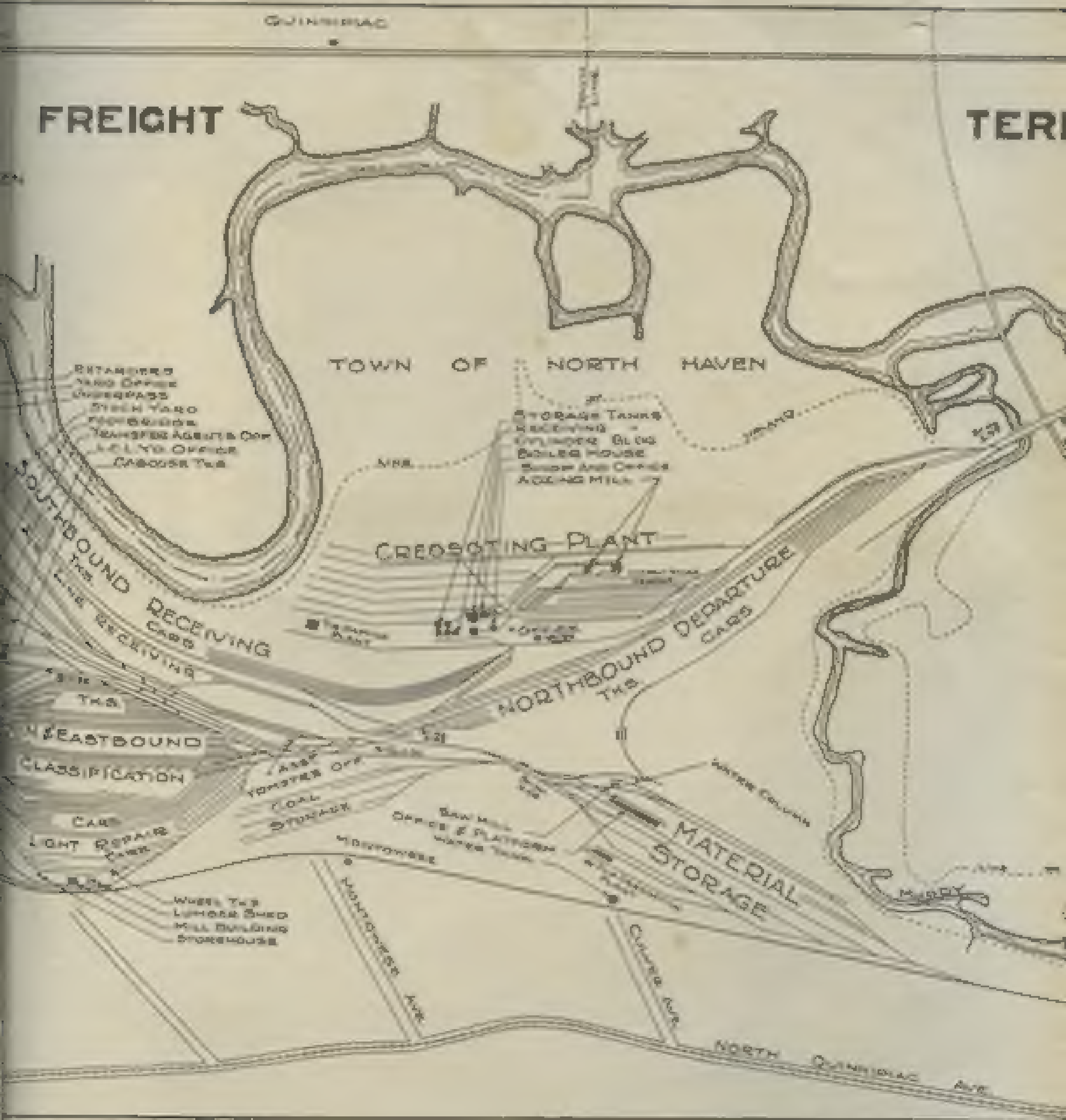
New Haven, Conn.,
March 18, 1938.

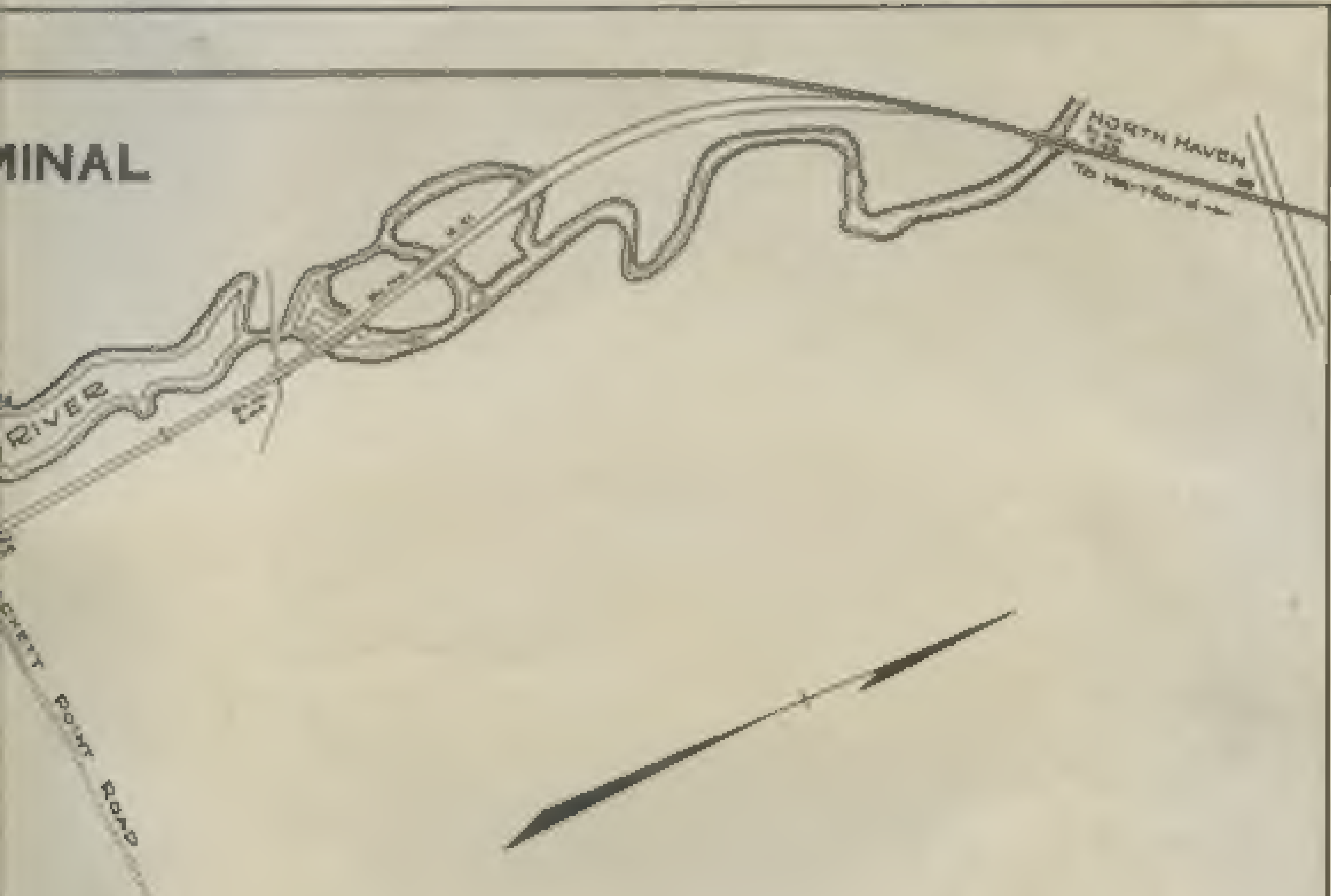
F. R. GOULETT, Superintendent.


CEDAR
MILL RIVER
STATE
JAMES
LOMBARD ST
FERRY ST
MIDDLETOWN AVE
TOOL CHECKERS BLDG
WATER TANK
44 STALL ENGINE HO
PUMP HOUSE
ASH PITS
COAL POCKET
POWER CHANGE
QUINNIPIA
LITTLE
RIVER
TO BOSTON
TUNNEL



HARTFORD
SOUTHBOUND
HILL
DEPARTURE
TKS.
WESTBOUND
CLASSIFICATION
CARS
LIGHT REPAIR
STOREHOUSE
MILL BUILDING
LUMBER SHED
SHORE LINE RECEIVING TKS CARS
TRANSFER
PLATFORMS
N.Y. & MAYBROOK RECEIVING
TKS.
CARS
SHORE LINE DEPARTURE
TKS.
CARS
AIR LINE MAIN
REC. YD. OFFICE
DEPART YD OFFICE
TOWN OF NEW HAVEN
MIDDLETOWN AVE.
AVE.


FREIGHT
TER
TOWN OF NORTH HAVEN
CREOSOTING PLANT
STORAGE TANKS
RECEIVING
CYLINDER BLDG
BOILER HOUSE
SHOP AND OFFICE
ADZING MILL
RETARDERS
YARD OFFICE
UNDERPASS
STOCK YARD
FOOT BRIDGE
TRANSFER AGENTS & OFF.
CABOOSE TKS.
SOUTHBOUND RECEIVING
CARS
LINE RECEIVING
TKS.
NORTHBOUND DEPARTURE
CARS
TKS.
EASTBOUND
CLASSIFICATION
CARS
LIGHT REPAIR
COAL
STORAGE
SAW MILL
OFFICE & PLATFORM
WATER TANK
WATER COLUMN
MATERIAL
STORAGE
WHEEL TKS
LUMBER SHED
MILL BUILDING
STOREHOUSE
MONTOWESE
MONTOWESE AVE.
CULVER AVE.
NORTH QUINNIPIAC AVE.
QUINNIPIAC


MINAL
NORTH HAVEN
To Hartford
RIVER
POINT ROAD
To Wallingford
RIVER
To Willimantic
PRESENT LAYOUT
CEDAR HILL TERMINAL
JANUARY 1950